(b) the amendment of the claims should not entail any further search by the Examiner since no new features are being added or no new issues are being raised; and

(c) the amendments do not significantly alter the scope of the claims and place the application at least into a better form for purpose of appeal.

The MPEP § 714.12 sets forth that "any amendment that would place the case either in condition for allowance or in better form for appeal may be entered." Moreover, MPEP § 714.13 sets forth that "the Proposed Amendment should be given sufficient consideration to determine whether the claims are in condition for allowance and/or whether the issues on appeal are simplified." The MPEP further articulates that the reason for any non-entry should be explained expressly in the Advisory Action.

REJECTION UNDER 35 U.S.C. § 103:

In the Office Action at pages 2-5, the Examiner rejected claims 1, 7, 9, 11-14, 19-20, 25, 33, 35, 37-38, 45, 47 and 55 under 35 U.S.C. §103 in view of either Maeda et al. (U.S. Patent No. 6,069,870) or Horikiri (U.S. Patent No. 5,537,373) as set forth in the previous Office Actions dated October 26, 2001 and March 6, 2002. The rejection is traversed based on the following and reconsideration is requested.

Applicant submits that claims 1, 9, 13, 19, 35, 38, and 45 have been amended as suggested by the Examiner, and respectfully requests withdrawal of the §103 rejection for the pending claims 1, 7, 9, 11-14, 19, 20, 25, 33, 35, 37, 38, 45, 47 and 55.

That is, Maeda et al. or Horikiri does not disclose or suggest a recording medium having land tracks and groove tracks that are wobbled, one of the groove tracks and the land tracks being a first type of tracks, and "the wobbles of a first track of the first type of tracks are out of phase with each other in a radial direction, the wobbles of a second track of the first type of tracks are out of phase in the radial direction, differently from the first track of the first type of tracks, the wobbles of a first track of the other type of tracks are in phase with each other in the radial direction, and the wobbles of a second track of the other type of tracks are in phase in the radial direction, differently from the first track of the other type of tracks," as recited in claim 1, and similarly claimed in 13-14, 19-20, 35, 37-38, 45 and 47.

As respectfully pointed out to the Examiner on July 2, 2002 interview, and explained in detail in the Applicant's Response filed on June 5, 2002 (applicable portions are incorporated herein by reference to avoid repetition), FIG. 3 of Maeda et al. appears to disclose a recording

medium having an out-of-phase and out-of-phase wobbled structure, and not an out-of-phase and in-phase wobbled structure of the present invention.

As respectfully pointed out to the Examiner on July 2, 2002 interview, and explained in detail in the Applicant's Response filed on June 5, 2002 (applicable portions are incorporated herein by reference to avoid repetition), FIG. 1A of Horikiri appears to disclose a recording medium having waveforms/wobbles on both sides of groove tracks, which are in-phase with respect to each other, but are arranged on the recording medium such that resulting waveforms/wobbles with respect to land tracks are random and arbitrary. That is, Horikiri appears to disclose only an in-phase wobbled structure, with resulting random out-of-phase land tracks, and not an out-of-phase and in-phase wobbled structure of the present invention.

Similarly, Maeda et al. or Horikiri does not disclose or suggest a recording medium having land tracks and groove tracks that are wobbled, and "the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks in a radial direction, and...have a phase difference of π...," as recited in claims 9 and 11-12, and similarly claimed in 13-14, 19-20, 35, 37-38, 45 and 47.

As respectfully pointed out to the Examiner on July 2, 2002 interview, and explained in detail in the Applicant's Response filed on June 5, 2002 (applicable portions are incorporated herein by reference to avoid repetition), Maeda et al. appears to disclose an out-of-phase by π/2 and out-of-phase by π/2 wobbled structure, and not an out-of-phase by π and out-of-phase by π structure in a radial direction of the present invention. Furthermore, Horikiri appears to disclose only an in-phase wobbled structure, with resulting random out-of-phase land tracks, and not the out-of-phase by π and out-of-phase by π structure in the radial direction of the present invention.

For at least the reasons stated above, and in Applicant's Responses filed on January 26, 2002 and June 5, 2002, Applicant respectfully submits that the claimed structures of the present invention are new and distinguishable from the structure of the recording medium shown in Maeda et al. or Horikiri. Furthermore, Maeda et al. or Horikiri does not disclose or suggest an optical disk recording and/or reproducing apparatus, a servo controller, and a servo controlling method, for a recording medium having the structures recited and claimed in Applicant's application.

The applicable portions of the Responses filed on January 26, 2002 and June 5, 2002, including the advantages of the present invention stated therein, are incorporated herein by reference to avoid repetition.

With respect to claims 11, 25, 33 and 55, Applicant respectfully notes, again, that they are drawn to physical identifier headers positioned at centers of groove and land tracks (see FIGS. 3 and 5 of Applicant's application), and such structure is not disclosed or suggested by the Applicant's own disclosure and Fig. 7A of Maeda et al. Instead, Applicant's own prior art (see FIG. 1 of Applicant's application) and Fig. 7A of Maeda et al. disclose headers positioned at a boundary line between the land and groove tracks. Advantages of having the physical identifier headers positioned at the centers of the groove and land tracks with respect to the recording medium structures of the present invention are disclosed in Applicant's Response filed on January 26, 2002, and relevant portions are incorporated herein by reference to avoid repetition. Accordingly, further based on reasons stated above, withdrawal of the §103 rejection for the claims 11, 25, 33 and 55 are earnestly solicited.

Finally, for at least the reasons stated above, and in Applicant's Response filed on June 5, 2002, Applicant respectfully submits that the structure of the recording media as recited and shown in Applicant's application are distinguishable from that of Asano et al. and Van Den Enden et al. Again, applicable portions of the June 5, 2002 Response are incorporated herein by reference to avoid repetition.

REQUEST FOR WITHDRAWAL OF FINALITY OF OFFICE ACTION AND ISSUANCE OF CORRECTED OFFICE ACTION:

In the Office Action, the Examiner makes Final the rejection of pending claims 1, 7, 9, 11-14, 19, 20, 25, 33, 35, 37, 38, 45, 47 and 55 by relying on the same arguments presented in the prior Office Actions dated October 26, 2001 and March 6, 2002. However, at the conclusion of the Examiner's Interview on July 2, 2002, the Examiner acknowledged that "Applicant's representative pointed out the inventive feature of the claimed invention and how it distinguishes over the prior art of record." (See PTO-413, Interview Summary sheet). Accordingly, Applicant respectfully submits that the finality of the August 1, 2002 Office Action is made prematurely.

That is, during the July 2, 2002 interview, Applicant pointed out the inventive features of the claimed invention and explained how it distinguishes over the prior art of record. Furthermore, a preliminary agreement with respect to the claims was reached, as indicated in the Interview Summary sheet. While a preliminary amendment of ones of the claims to that

effect did not materialize prior to the instant Office Action, Applicant respectfully submits that the finality of the instant Office Action is premature because the Examiner has not included any rebuttal of arguments raised by the Applicant with respect to the remaining claims, during the July 2, 2002 interview, in the instant Office Action.

In other words, while the Examiner acknowledged the inventive features of the claimed invention over previously cited prior art, at least in part based on the Applicant's arguments, the Examiner made the instant Office Action Final without proving the Applicant with a rebuttal argument and/or an opportunity to address the remaining issues. See MPEP §706.06

Therefore, Applicant respectfully requests that the Examiner withdrawal the finality of the rejection, should the instant amendment be not entered, so as to provide the Applicant with an opportunity to bring the prosecution to a conclusion.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited. At a minimum, this Amendment should be entered at least for purposes of Appeal as it either clarifies and/or narrows the issues for consideration by the Board.

Again, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: October 28, 2002 By: 

Charles Y. Park
Registration No. 50,709

700 Eleventh Street, NW, Suite 500
Washington, D.C. 20001
(202) 434-1500

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

For the convenience of the Examiner, prior amendment/addition of claims 20, 25 and 55 are reprinted herein below.

Please AMEND claims 1, 9, 13, 19, 35, 38, and 45 in accordance with the following:

1. (TWICE AMENDED) A recording medium comprising:

land tracks; and

groove tracks;

wherein

the land tracks and the groove tracks are wobbled, and [the wobbles]one of the groove tracks [or individual]and the land tracks are a first type of tracks [which are out of phase with],

the wobbles of a first track of the first type of tracks are out of phase with each other in a radial direction,

the wobbles of a second track of the first type of tracks are out of phase in the radial direction, differently from the first track of the first type of tracks,

the wobbles of a first track of the other type of tracks are in phase with each other in the radial direction, and

the wobbles of [the next]a second track of the other type of tracks are in phase in the radial direction, differently from the first track of the other type of tracks [by a predetermined phase difference and the wobbles of the other type of tracks are in phase with the wobbles of the next first type of tracks].

9. (TWICE AMENDED) A recording medium comprising:

land tracks; and

groove tracks;

wherein

the land tracks and the groove tracks are wobbled,

the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks in a radial direction, and

the wobbles formed of the land tracks and the groove tracks have a phase difference of π with the wobbles of the next other types of tracks.

13. (TWICE AMENDED) A servo controller in an optical recording and/or reproducing apparatus [having]including a pickup unit for tracking an optical recording medium having wobbled groove [tracks] and land tracks, wherein one of the groove tracks and the land tracks are a first type of tracks, the servo controller comprising:

a photo detector to output as two channels a light signal reflected from the optical recording medium in which the wobbles of [the groove tracks or the land tracks which are] a first track of the first type of tracks are out of phase with each other in a radial direction, the wobbles of a second tracks of the first type of tracks are out of phase in the radial direction differently from the first tracks of the first type of tracks, the wobbles of a first tracks of the other type of tracks are in phase with each other in the radial direction, and [with] the wobbles of [the next]a second tracks of the other type of tracks are in phase in the radial direction differently from the first tracks of the other type of tracks [by a predetermined phase difference and the wobbles of the other type of tracks are in phase with the wobbles of the next first type of tracks], or the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks by π in the radial direction;

a wobble signal detector to detect a wobble signal from at least one of the two channels;

a wobble signal determiner to determine whether one of the tracks, which is currently tracked by the pickup unit, is a groove track or a land track based on the at least one wobble signal, and to provide a determination signal; and

a controller to generate a control signal for controlling a servo for moving the pickup unit using the determination signal and the detected wobble signal.

19. (TWICE AMENDED) A servo controlling method for an optical recording and/or reproducing apparatus [having]including a pickup unit for tracking an optical recording medium having wobbled groove and land tracks, wherein one of the groove tracks and the land tracks are a first type of tracks, the servo controlling method comprising:

outputting as two channels a light signal reflected from the optical recording medium in which the wobbles of [the groove tracks or the land tracks which are] a first track of the first type of tracks are out of phase with each other in a radial direction, the wobbles of a second tracks of the first type of tracks are out of phase in the radial direction differently from the first tracks of the first type of tracks, the wobbles of a first tracks of the other type of tracks are in phase with each other in the radial direction, and [with] the wobbles of [the next]a second tracks of the other type of tracks are in phase in the radial direction differently from the first tracks of the other type of

tracks [by a predetermined phase difference and the wobbles of the other type of tracks are in phase with the wobbles of the next first type of tracks], or the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks by π in the radial direction;

detecting a wobble signal from at least one of the two channels;

determining whether one of the tracks which is currently tracked by the pickup unit, is a groove track or a land track based on the at least one wobble signal to provide a determination signal; and

controlling a servo for moving the pickup unit using the determination signal and the detected wobble signal.

20. (AS ONCE AMENDED) The method according to claim 19, wherein the detecting of the wobble signal comprises detecting a groove wobble signal and a land wobble signal from a first one of the two channels corresponding to a sum of two signals output from the photo detector in response to the wobbles of the land tracks and the groove tracks being out of phase with the wobbles of the next other types of tracks, the detected groove wobble signal and the land wobble signal being out of phase with respect to each other.

25. (AS ONCE AMENDED) A recording medium comprising:

land tracks;

groove tracks; and

physical identifier headers formed in centers of the land and groove tracks, respectively;

wherein the land tracks and groove tracks are wobbled, and the groove tracks have a same frequency as and are out of phase with the land tracks.

35. (TWICE AMENDED) An optical recording and/or reproducing apparatus [having]including a pickup for tracking an optical recording medium having wobbled groove and land tracks, wherein one of the groove tracks and the land tracks are a first type of tracks, and a servo to move the pickup, comprising:

a photo detector to output two signals in response to a light signal reflected from the optical recording medium in which the wobbles of [the groove tracks or the land tracks which are] a first track of the first type of tracks are out of phase with each other in a radial direction, the wobbles of a second tracks of the first type of tracks are out of phase in the radial direction

differently from the first tracks of the first type of tracks, the wobbles of a first tracks of the other type of tracks are in phase with each other in the radial direction, and [with] the wobbles of [the next]a second tracks of the other type of tracks are in phase in the radial direction differently from the first tracks of the other type of tracks [by a predetermined phase difference and the wobbles of the other type of tracks are in phase with the wobbles of the next first type of tracks], or the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks by π in the radial direction; and

a servo control unit to determine a wobble signal from the two signals, and in response, generate a control signal to move the servo, wherein the servo control unit comprises:

a wobble signal detector to detect the wobble signal from the two signals,

a wobble signal determiner to determine whether one of the tracks, which is currently tracked by the pickup, is a groove track or a land track based on the wobble signal, to generate a determination signal, and

a controller to generate the control signal based upon the wobble signal and the determination signal.

38. (TWICE AMENDED) An optical recording and/or reproducing apparatus [having]including a pickup for tracking an optical recording medium having wobbled groove and land tracks, wherein one of the groove tracks and the land tracks are a first type of tracks, and a servo to move the pickup, comprising:

a photo detector to output two signals in each of two channels in response to a light signal reflected from the optical recording medium in which the wobbles of [the groove tracks or the land tracks which are] a first track of the first type of tracks are out of phase with each other in a radial direction, the wobbles of a second tracks of the first type of tracks are out of phase in the radial direction differently from the first tracks of the first type of tracks, the wobbles of a first tracks of the other type of tracks are in phase with each other in the radial direction, and [with] the wobbles of [the next]a second tracks of the other type of tracks are in phase in the radial direction differently from the first tracks of the other type of tracks [by a predetermined phase difference and the wobbles of the other type of tracks are in phase with the wobbles of the next first type of tracks], or the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks by π in the radial direction; and

a servo control unit to determine at least one wobble signal from at least one of the two channels, respectively, and in response, generate a control signal to move the servo, wherein

the servo control unit comprises:

a wobble signal detector to detect the at least one wobble signal from the at least one of the two channels,

a wobble signal determiner to determine whether one of the tracks, which is currently tracked by the pickup, is a groove track or a land track based on the at least one wobble signal, to generate a determination signal, and

a controller to generate the control signal based upon the at least one wobble signal and the determination signal.

45. (TWICE AMENDED) A servo controlling method for an optical recording and/or reproducing apparatus [having]including a pickup for tracking a recording medium having wobbled groove and land tracks, wherein one of the groove tracks and the land tracks are a first type of tracks, the servo controlling method comprising:

outputting two signals in response to a light signal reflected from the optical recording medium in which the wobbles of [the groove tracks or the land tracks which are] a first track of the first type of tracks are out of phase with each other in a radial direction, the wobbles of a second tracks of the first type of tracks are out of phase in the radial direction differently from the first tracks of the first type of tracks, the wobbles of a first tracks of the other type of tracks are in phase with each other in the radial direction, and [with] the wobbles of [the next]a second tracks of the other type of tracks are in phase in the radial direction differently from the first tracks of the other type of tracks [by a predetermined phase difference and the wobbles of the other type of tracks are in phase with the wobbles of the next first type of tracks], or the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks by π in the radial direction; and

determining a wobble signal from two signals, and in response, generating a control signal to move the servo, wherein the determining of the wobble signal comprises:

detecting the wobble signal from the two signals,

determining whether one of the tracks, which is currently tracked by the pickup, is a groove track or a land track based on the wobble signal, to generate a determination signal, and

generating the control signal based upon the wobble signal and the determination signal.

55. (AS UNAMENDED) A recording medium comprising:

land tracks;

groove tracks; and

physical identifier headers which store track numbers and sector numbers and are prepitted in centers of corresponding ones of the land tracks and groove tracks;

wherein the land tracks and the groove tracks are wobbled, and the wobbles of the groove tracks and the land tracks are out of phase with the wobbles of the next other types of tracks.